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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/559,849	12/07/2005	Miki Wolf	1318MMG-US	1965

7590 08/18/2006

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EXAMINER

RUTLAND WALLIS, MICHAEL

ART UNIT	PAPER NUMBER
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2835

DATE MAILED: 08/18/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/559,849	Applicant(s) WOLF ET AL.	
	Examiner Michael Rutland-Wallis	Art Unit 2835	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 December 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 December 2005 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>12/07/2005</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Information Disclosure Statement

The information disclosure statement filed 12/07/2005 fails to comply with 37 CFR 1.98(a)(2), which requires a legible copy of each cited foreign patent document; each non-patent literature publication or that portion which caused it to be listed; and all other information or that portion which caused it to be listed. It has been placed in the application file, but the information referred to therein has not been considered.

It is also noted applicant refers to U.S. Pat. No. 4,61,455 Carter et al. and U.S. Pub No. 2002/003820 Matsunaga et al. these references are not properly cited.

U.S. Pat. No. 4,61,455 should be listed as Wiener et al. NOT Carter et al.

U.S. Pub No. 2002/003820 should be listed Yoshida et al. NOT Matsunaga et al.

The misidentified U.S. patents have been corrected and considered.

Specification

This application does not contain an abstract of the disclosure as required by 37 CFR 1.72(b). An abstract on a separate sheet is required.

Drawings

Figure 1-3 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -
(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-3 are rejected under 35 U.S.C. 102(b) as being anticipated by Kotov Y A et al. IEEE publication *A Novel Nanosecond Semiconductor Opening Switch for Mega-volt Repetitive Pulsed Power Technology: Experiment and Applications* hereinafter referred to as "Kotov"

With respect to claim 1 Kotov teaches a high voltage magnetic compression modulator (see Fig. 4 and 5) comprising: a low-voltage part (left of transformer) comprising an energy source (input supply terminals) connected to a primary winding of

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a pulsed transformer (see Fig. 4); and a high-voltage part (right side of transformer) comprising a secondary winding of said pulsed transformer connected to a capacitor (not labeled see plurality of capacitors in Fig. 4 or also see fig. 5 connected to the secondary windings), said capacitor being connected to a magnetic switch (item MS), said magnetic switch being connected to a load (R_{load} fig. 5); characterized in that a unidirectional low-impedance path (path through diode) for the charge of said capacitor is connected in parallel (see connection of Fig. 5) to said load.

With respect to claim 2 Kotov teaches the low-voltage part further comprises a storage capacitor (not labeled see capacitor in Fig. 4) and a fast high-current commutator (see diode on left side of Fig. 4), all connected in series in a loop with said primary winding of said pulsed transformer, and wherein said energy source comprises a capacitor charger (the supply input charges the capacitor).

With respect to claim 3 Kotov teaches the charger is connected to the storage capacitor and to the fast high-current commutator (see Fig. 4).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 4-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kotov Y A et al. cited above in view of Weiner et al. (U.S. Pat. No. 4,612,455)

With respect to claim 4 Kotov teaches the pulsed transformer with primary and secondary windings the details of the core are not discussed by Kotov. Weiner teaches a magnetic pulse compression unit and pulse transformer where the use of a ferrite core (item 54) in the transformer it would have been obvious to one of ordinary skill in the art at the time of the invention to use a ferrite core in the pulse transformer of Kotov in order to increase the efficiency effectiveness of the transformer as such is well known in the art.

With respect to claim 5 Kotov teaches the low impedance path includes a diode and while not disclosed as a freewheeling diode. It would have been obvious to one of ordinary skill in the art at the time of the invention to use a freewheeling diode in the device of Kotov in order to switch faster if it is held such a diode is not with the scope of Kotov.

With respect to claim 6 Kotov teaches a high voltage magnetic compression modulator (see Fig. 4 and 5) comprising: a low-voltage part (left of transformer) comprising a charger (input supply terminals) with a first terminal connected to a first terminal of a storage capacitor and to a first terminal of a fast high-current commutator (see diode on right side of Fig. 4), and with a second terminal connected to a second terminal of said commutator and to a first terminal of a low-voltage winding of a pulsed transformer, the second terminal of said low-voltage winding being connected to the second terminal of said storage capacitor (see Fig. 4); and a high-voltage part (right

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side of transformer) formed by said high-voltage transformer whose secondary winding is connected in parallel to a first capacitor and by a first of its terminals to a first terminal of a second capacitor, and by a second of its terminals to a first terminal of a magnetic switch (item MS), a second terminal of the magnetic switch being connected to a first terminal of a load (R_{load} fig. 5), a second terminal of said secondary winding being connected to a second terminal of said load; characterized in that a low-impedance path (path through diode) is provided for the charge of said second capacitor through a diode (in Fig. 5) connected in parallel to said load (see connection in Fig. 5). Kotov is silent on the use of a Weiner teaches a magnetic pulse compression unit and pulse transformer where the use of a ferrite core is disclosed It would have been obvious to one of ordinary skill in the art at the time of the invention to use a ferrite core in the pulse transformer of Kotov in order to increase the efficiency effectiveness of the transformer. Kotov teaches the low impedance path includes a diode and while not disclosed as a freewheeling diode. It would have been obvious to one of ordinary skill in the art at the time of the invention to use a freewheeling diode in the device of Kotov in order to switch faster if it is held such a diode is not with the scope of Koto

With respect to claim 7 Kotov teaches the charger first terminal is its positive terminal and said charger second terminal is its negative terminal (see Fig. 4).

With respect to claim 8 Kotov teaches the charger first terminal is its positive terminal and said charger second terminal is its negative terminal it would have been obvious to one of ordinary skill in the art at the time of the invention to reverse the polarity in order to utilize negative voltage and negative logic.

With respect to claim 9 Kotov teaches the fast high-current commutator comprises a thyristor.

With respect to claim 10 Weiner teaches the said ferromagnetic core. A detailed discussion relating to the magnetic curve of the core of Weiner is not given typical ferrite core pulse transformer have regular rectangular magnetization curves it would have been obvious to one of ordinary skill in the art at the time of the invention to use such a core in order to increase the efficiency and effectiveness of the transformer if it held that such a curve is not a property of the core of Weiner.

With respect to claim 11 Kotov teaches additional compression stages connected between said magnetic switch and said load and diode, each stage (see stages of Fig. 4) comprising an additional first magnetic switch, whose winding is connected in parallel (see connection of Fig. 5) to the first capacitor of this stage and by the first of its terminals to the first terminal of the second capacitor of this stage, whose second terminal is connected to the first terminal of the winding of second additional magnetic switch of this stage, the second terminal of second magnetic switch winding being connected to the first terminal of the first magnetic switch of the following stage, the second terminal of said winding of said first magnetic switch being connected to the second terminal of said load and to said diode, whose second terminals are connected to the second terminal of the second magnetic switch of the last compression stage.

With respect to claim 12 Kotov teaches at least one of said first magnetic switches (item MS) is implemented as a high-voltage transformer (see Fig. 5) wound on a ferromagnetic core. While the discussion of the magnetization curve is discussed it

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would have been obvious to one of ordinary skill in the art at the time of the invention to use a core with such a curve, as rectangular magnetic curve as such is typical in pulse transformers.

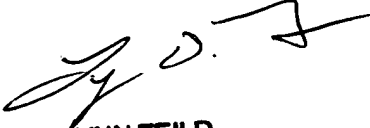
Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Yoshida (U.S. Pat. No. 6,389,049) teaches pulse power source and magnetically controlled semiconductor switch.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Rutland-Wallis whose telephone number is 571-272-5921. The examiner can normally be reached on Monday-Thursday 7:30AM-6:00PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lynn D. Feild can be reached on 571-272-2092. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


LYNN FEILD
SUPERVISORY PATENT EXAMINER